CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING

Bldg. 1

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service. Contractor's personnel shall leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owner, and contractor. It is understood the owner's representative's signature is in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME S.U.N.Y. Phase II Housing DATE 3/24/03

PROPERTY ADDRESS 735 Anderson Hill Rd. Purchase, NY 10577

PLANS

ACCEPTED BY APPROVING AUTHORITIES (NAMES)

ADDRESS

INSTALLATION CONFORMS TO ACCEPTED PLANS ☐YES ☐NO

EQUIPMENT USED IS APPROVED ☐YES ☐NO

IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? ☐YES ☐NO

IF NO, EXPLAIN

HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:

1. SYSTEM COMPONENTS INSTRUCTIONS ☐YES ☐NO
2. CARE AND MAINTENANCE INSTRUCTIONS ☐YES ☐NO
3. NFPA 13A ☐YES ☐NO

LOCATION OF SYSTEM

SUPPLIES BUILDINGS ☐YES ☐NO

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Centetal	Optima	2002			160°
Tyco	TY3551	2003			160°

PIPE AND FITTINGS

Type of Pipe Schedule 40 black & Voctolic light wall

Type of Fittings Schedule 40 malleable black & victolic fittings

ALARM VALVE OR FLOW INDICATOR

ALARM DEVICE TYPE	MAKE	MODEL	MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION MIN.	SEC.
SystemSensor	Sensor:OSY2 Flow:WEDT			
Potter	Sensor:OSY2-SU			

DRY VALVE

MAKE	MODEL	SERIAL NO.	MAKE	MODEL	SERIAL NO.
N/A					

DRY PIPE OPERATING TEST

	TIME TO TRIP - THRU TEST CONNECTION MIN.	SEC.	WATER PRESSURE PSI	AIR PRESSURE PSI	TRIP POINT AIR PRESSURE PSI	TIME WATER REACHED TEST OUTLET MIN.	SEC.	ALARMS OPERATED PROPERLY YES	NO
Without Q.E.D.									
With Q.E.D.									

IF NO, EXPLAIN

*MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.

SSA (10-98) PRINTED IN U.S.A.

(OVER)

Figure 2-1.2.1 Contractor's material and test certificate for aboveground piping.

SYSTEM ACCEPTANCE

HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT 200 PSI FOR 2 HOURS	JOINTS COVERED ☐ YES ☐ NO
LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED NA GALS. NA HOURS ALLOWABLE LEAKAGE NA GALS. NA HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN (IF NO, STATE REASON) HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM	☐ YES ☐ NO X ☒ YES ☐ NO
REMARKS	DATE LEFT IN SERVICE	
SIGNATURES	NAME OF INSTALLING CONTRACTOR TESTS WITNESSED BY FOR PROPERTY OWNER (SIGNED) / TITLE / DATE FOR INSTALLING CONTRACTOR (SIGNED) / TITLE D&T Mechanical / DATE	
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(b) (cont.).

8-2 Acceptance Requirements.

8-2.1* Flushing of Piping. Underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than:

(a) The hydraulically calculated water demand rate of the system including any hose requirements, or

(b) That flow necessary to provide a velocity of 10 ft per second (3 m/s), or

(c) The maximum flow rate available to the system under fire conditions.

Table 8-2.1 Flow Required to Produce a Velocity of 10 ft per second (3 m/s) in Pipes

Pipe Size (in.)	Flow Rate (gpm)	Flow Rate (L/min)
4	390	1476
6	880	3331
8	1560	5905
10	2440	9235
12	3520	13328

8-2.2 Hydrostatic Tests.

8-2.2.1* All interior piping and attached appurtenan subjected to system working pressure shall be hydrost cally tested at 200 psi (13.8 bars) and shall maintain pressure without loss for 2 hours. Loss shall be determi by a drop in gauge pressure or visual leakage.

Exception No. 1: Portions of systems normally subjected to wo ing pressures in excess of 150 psi (10.4 bars) shall be tested described above at a pressure of 50 psi (3.5 bars) in excess of mal working pressure.

Exception No. 2: When cold weather will not permit testing water, an interim air test may be conducted as described in 8-2

The test pressure shall be read from a gauge located at low elevation point of the system or portion being tested.

8-2.2.2 Additives. Additives, corrosive chemicals such sodium silicate or derivatives of sodium silicate, brine, other chemicals shall not be used while hydrostatically te ing systems or for stopping leaks.

8-2.2.3 Piping between the exterior fire department c nection and the check valve in the fire department in pipe shall be hydrostatically tested in the same manner the balance of the system.

8-2.2.4 When hydrostatically testing deluge systen plugs shall be installed in fittings and replaced with op sprinklers after the test is completed, or the operating e ments of automatic sprinklers shall be removed after t test is completed.

(j) Any small enclosures in which no sprinklers are to be nstalled.

(k) Size of city main in street, pressure and whether lead-end or circulating and, if dead-end, direction and listance to nearest circulating main, city main test results ncluding elevation of test hydrant.

(l) Make, manufacturer, type, heat-response element, emperature rating, and nominal orifice size of sprinkler.

(m) Temperature rating and location of high-emperature sprinklers.

(n) Number of sprinklers on each riser, per floor.

(o) Kind and location of alarm bells.

(p) Type of pipe and fittings.

(q) Type of protection for nonmetallic pipe.

(r) Nominal pipe size with lengths shown to scale.

NOTE: Where typical branch lines prevail, it will be necessary to size only one line.

(s) Location and size of riser nipples.

(t) Type of fittings and joints and location of all welds nd bends.

(u) Types and locations of hangers, sleeves, braces, and ethods of securing sprinklers, where applicable.

(v) All control valves, check valves, drain pipes, and test nnections.

(w) Underground pipe size, length, location, weight, aterial, point of connection to city main; the type of dves, meters, and valve pits; and the depth at which the p of the pipe is laid below grade.

(x) For hydraulically designed systems, the material to : included on the hydraulic data nameplate.

(y) Name and address of contractor.

1.2 Approval of Sprinkler Systems.

1.2.1 The installer shall perform all required accep-)ce tests (*see 2-1.5*), complete the Contractor's Material d Test Certificate(s) (*see Figure 2-1.2.1*), and forward the tificate(s) to the authority having jurisdiction, prior to ding for approval of the installation.

1.2.2 When the authority having jurisdiction desires to present during the conducting of acceptance tests, the taller shall give advance notification of the time and e the testing will be performed.

3 Acceptance Tests.

3.1 Flushing of Underground Connections.

3.1.1 Underground mains and lead-in connections to em risers shall be flushed before connection is made to inkler piping, in order to remove foreign materials that / have entered the underground piping during the se of the installation. For all systems, the flushing ration shall be continued until water is clear.

2-1.2.1.2 Underground mains and lead-in connections shall be flushed at the hydraulically calculated water demand rate of the system.

2-1.5.1.3 To avoid property damage, provision shall be made for the disposal of water issuing from test outlets.

2-1.3.2* Hydrostatic pressure tests shall be provided in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.*

Exception: Testing for leakage at 50 psi (3.4 bars) water pressure above the maximum system pressure shall be acceptable for systems having less than 20 sprinklers and no fire department connection.

2-2 Design and Installation.

2-2.1 Devices and Materials.

2-2.1.1 Only new sprinklers shall be employed in the installation of sprinkler systems. At least 3 spare sprinklers of each type, temperature rating, and orifice size used in the system shall be kept on the premises. Replacement sprinklers shall have the same operating characteristics as the sprinklers being replaced.

2-2.1.2 Only listed or approved devices and materials as indicated in this standard shall be used in sprinkler systems.

2-2.1.3 Sprinkler systems shall be designed for a maximum working pressure of 175 psi (12.1 bars).

Exception: Higher design pressures may be used when all system components are rated for pressures higher than 175 psi (12.1 bars).

2-3 Water Supply.

2-3.1 General Provisions. Every automatic sprinkler system shall have at least one automatic water supply. When stored water is used as the sole source of supply, the minimum quantity shall equal the water demand rate times 30 minutes. (*See 2-5.1.3.*)

2-3.2* Water Supply Sources. The following water supply sources are acceptable:

(a) A connection to a reliable water works system with or without a booster pump, as required.

(b) An elevated tank.

(c) A pressure tank installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems,* and NFPA 22, *Standard for Water Tanks for Private Fire Protection.*

(d) A stored water source with an automatically operated pump, installed in accordance with NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps.*

CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING

Table 2

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before the contractor's personnel finally leave the job.

A certificate similar to this shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owner, and contractor. It is understood the owner's representative's signature in no way relieves the contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME S.U.N.Y. Phase II Housing DATE 2/21/03

PROPERTY ADDRESS 735 Anderson Hill Rd. Purchase, NY 10577

ACCEPTED BY APPROVING AUTHORITIES (NAME)

ADDRESS

PLANS

INSTALLATION CONFORMS TO ACCEPTED PLANS ☐ YES ☐ NO

EQUIPMENT USED IS APPROVED ☐ YES ☐ NO

IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? ☐ YES ☐ NO

IF NO, EXPLAIN

GAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:

1. SYSTEM COMPONENTS INSTRUCTIONS ☐ YES ☐ NO
2. CARE AND MAINTENANCE INSTRUCTIONS ☐ YES ☐ NO
3. NFPA-13A ☐ YES ☐ NO

LOCATION OF SYSTEM

SUPPLIES BUILDINGS

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Central	Optima	2002			160°
Tyco	TY3651	2001			160°

PIPE AND FITTINGS

Type of Pipe Schedule 40 black & Victolic light wall

Type of Fittings Schedule 40 malleable black & victolic fittings

ALARM VALVE OR FLOW INDICATOR

ALARM DEVICE TYPE	MAKE	MODEL	MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION MIN.	SEC.
~~System Sensor~~	~~Tyco~~	~~EQSY2 Flow~~ WEDT		
Potter	Tyco	EQSY2-SI		

DRY VALVE

MAKE	MODEL	SERIAL NO.	MAKE	MODEL	SERIAL NO.
N/A					

DRY PIPE OPERATING TEST

	TIME TO TRIP - THRU TEST CONNECTION* MIN.	SEC.	WATER PRESSURE PSI	AIR PRESSURE PSI	TRIPPOINT AIR PRESSURE PSI	TIME WATER REACHED TEST OUTLET MIN.	SEC.	ALARM OPERATED PROPERLY YES	NO
Initial O.D.D.									
With O.D.D.									

IF NO, EXPLAIN

*MEASURED FROM THE INSPECTOR'S TEST CONNECTION (OPENED)

Figure 2-1.2.1 Contractor's material and test certificate for aboveground piping.

SYSTEM ACCEPTANCE

HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT 200 PSI FOR 2 HOURS	JOINTS COVERED ☐ YES ☐ NO
	TOTAL AMOUNT OF LEAKAGE MEASURED	
LEAKAGE TEST	NA GALS. NA HOURS	
	ALLOWABLE LEAKAGE	
	NA GALS. NA HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN IF NO, STATE REASON	☐ YES ☐ NO X
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ATTENDING ALARM	X YES ☐ NO
	DATE LEFT IN SERVICE	
REMARKS		
SIGNATURES	NAME OF INSTALLING CONTRACTOR	
	TESTS WITNESSED BY	
	FOR PROPERTY OWNER (SIGNED) / TITLE / DATE	
	FOR INSTALLING CONTRACTOR (SIGNED) / TITLE D&T Mechanical / DATE	
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(b) (cont.).

8-2 Acceptance Requirements.

8-2.1* Flushing of Piping. Underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than:

(a) The hydraulically calculated water demand rate of the system including any hose requirements, or

(b) That flow necessary to provide a velocity of 10 ft per second (3 m/s), or

(c) The maximum flow rate available to the system under fire conditions.

Table 8-2.1 Flow Required to Produce a Velocity of 10 ft per second (3 m/s) in Pipes

Pipe Size (in.)	Flow Rate (gpm)	Flow Rate (L/min)
4	390	1476
6	880	3331
8	1560	5905
10	2440	9235
12	3520	13328

8-2.2 Hydrostatic Tests.

8-2.2.1* All interior piping and attached appurtena subjected to system working pressure shall be hydros cally tested at 200 psi (13.8 bars) and shall maintain pressure without loss for 2 hours. Loss shall be determi by a drop in gauge pressure or visual leakage.

Exception No. 1: Portions of systems normally subjected to w ing pressures in excess of 150 psi (10.4 bars) shall be teste described above at a pressure of 50 psi (3.5 bars) in excess of mal working pressure.

Exception No. 2: When cold weather will not permit testing water, an interim air test may be conducted as described in 8-

The test pressure shall be read from a gauge located at low elevation point of the system or portion being tested

8-2.2.2 Additives. Additives, corrosive chemicals such sodium silicate or derivatives of sodium silicate, brine other chemicals shall not be used while hydrostatically t ing systems or for stopping leaks.

8-2.2.3 Piping between the exterior fire department c nection and the check valve in the fire department i pipe shall be hydrostatically tested in the same manner the balance of the system.

8-2.2.4 When hydrostatically testing deluge syste plugs shall be installed in fittings and replaced with o sprinklers after the test is completed, or the operating ments of automatic sprinklers shall be removed after test is completed.

(j) Any small enclosures in which no sprinklers are to be stalled.

(k) Size of city main in street, pressure and whether lead-end or circulating; and, if dead-end, direction and istance to nearest circulating main, city main test results cluding elevation of test hydrant.

(l) Make, manufacturer, type, heat-response element, mperature rating, and nominal orifice size of sprinkler.

(m) Temperature rating and location of high-mperature sprinklers.

(n) Number of sprinklers on each riser, per floor.

(o) Kind and location of alarm bells.

(p) Type of pipe and fittings.

(q) Type of protection for nonmetallic pipe.

(r) Nominal pipe size with lengths shown to scale.

NOTE: Where typical branch lines prevail, it will be necessary to size only one line.

(s) Location and size of riser nipples.

(t) Type of fittings and joints and location of all welds nd bends.

(u) Types and locations of hangers, sleeves, braces, and ethods of securing sprinklers, where applicable.

(v) All control valves, check valves, drain pipes, and test nnections.

(w) Underground pipe size, length, location, weight, aterial, point of connection to city main; the type of lves, meters, and valve pits; and the depth at which the p of the pipe is laid below grade.

(x) For hydraulically designed systems, the material to included on the hydraulic data nameplate.

(y) Name and address of contractor.

1.2 Approval of Sprinkler Systems.

1.2.1 The installer shall perform all required accep-ce tests (*see 2-1.3*), complete the Contractor's Material d Test Certificate(s) (*see Figure 2-1.2.1*), and forward the tificate(s) to the authority having jurisdiction, prior to ting for approval of the installation.

.2.2 When the authority having jurisdiction desires to present during the conducting of acceptance tests, the taller shall give advance notification of the time and e the testing will be performed.

.3 Acceptance Tests.

.3.1 Flushing of Underground Connections.

3.1.1 Underground mains and lead-in connections to em risers shall be flushed before connection is made to inkler piping, in order to remove foreign materials that r have entered the underground piping during the se of the installation. For all systems, the flushing ration shall be continued until water is clear.

2-1.3.1.2 Underground mains and lead-in connections shall be flushed at the hydraulically calculated water demand rate of the system.

2-1.3.1.3 To avoid property damage, provision shall be made for the disposal of water issuing from test outlets.

2-1.3.2* Hydrostatic pressure tests shall be provided in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.*

Exception: Testing for leakage at 50 psi (3.4 bars) water pressure above the maximum system pressure shall be acceptable for systems having less than 20 sprinklers and no fire department connection.

2-2 Design and Installation.

2-2.1 Devices and Materials.

2-2.1.1 Only new sprinklers shall be employed in the installation of sprinkler systems. At least 3 spare sprinklers of each type, temperature rating, and orifice size used in the system shall be kept on the premises. Replacement sprinklers shall have the same operating characteristics as the sprinklers being replaced.

2-2.1.2 Only listed or approved devices and materials as indicated in this standard shall be used in sprinkler systems.

2-2.1.3 Sprinkler systems shall be designed for a maximum working pressure of 175 psi (12.1 bars).

Exception: Higher design pressures may be used when all system components are rated for pressures higher than 175 psi (12.1 bars).

2-3 Water Supply.

2-3.1 General Provisions. Every automatic sprinkler system shall have at least one automatic water supply. When stored water is used as the sole source of supply, the minimum quantity shall equal the water demand rate times 30 minutes. (*See 2-5.1.3.*)

2-3.2* Water Supply Sources. The following water supply sources are acceptable:

(a) A connection to a reliable water works system with or without a booster pump, as required.

(b) An elevated tank.

(c) A pressure tank installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, and NFPA 22, *Standard for Water Tanks for Private Fire Protection.*

(d) A stored water source with an automatically operated pump, installed in accordance with NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps.*

CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR A ABOVEGROUND PIPING

Bldg 3

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate must be filled out and signed by both representatives. Copies shall be provided for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME: S.U.N.Y. Phase II Housing — DATE: 12/12/03

PROPERTY ADDRESS: 735 Anderson Hill Rd, Purchase, NY 10577

PLANS

ACCEPTED BY APPROVING AUTHORITIES (NAMES)

ADDRESS

INSTALLATION CONFORMS TO ACCEPTED PLANS — ☐ YES ☐ NO

EQUIPMENT USED IS APPROVED — ☐ YES ☐ NO

IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

WAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? — ☐ YES ☐ NO

IF NO, EXPLAIN

HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:

1. SYSTEM COMPONENTS' INSTRUCTIONS — ☐ YES ☐ NO
2. CARE AND MAINTENANCE INSTRUCTIONS — ☐ YES ☐ NO
3. NFPA 13R — ☐ YES ☐ NO

LOCATION OF SYSTEM

SUPPLIES BUILDINGS

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Centrtal	Optima	2002			160°
Tyco	TY3651	2001			160°

PIPE AND FITTINGS

Type of Pipe: Schedule 40 black & Victolic light wall

Type of Fittings: Schedule 40 malible black & victolic fittings

ALARM VALVE OR FLOW INDICATOR

TYPE	MAKE	MODEL	MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION (MIN. / SEC.)
~~System Sensor~~	~~Tamper: OSY2 / Flow: WFDT~~		
Potter	~~Tamper: OSY2-SU~~		

DRY VALVE

MAKE	MODEL	SERIAL NO.	MAKE	MODEL	SERIAL NO.
N/A					

DRY PIPE OPERATING TEST

	TIME TO TRIP - THIRD TEST CONNECTION (MIN. / SEC.)	WATER PRESSURE (PSI)	AIR PRESSURE (PSI)	TRIP POINT AIR PRESSURE (PSI)	TIME WATER REACHED TEST OUTLET (MIN. / SEC.)	ALARM OPERATED PROPERLY (YES / NO)
Without Q.R.D.						
With Q.R.D.						

IF NO, EXPLAIN

*MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.

FSA (10-99) PRINTED IN U.S.A. (OVER)

Figure 2-1.2.1 Contractor's material and test certificate for aboveground piping.

SYSTEM ACCEPTANCE

HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT 200 PSI FOR 2 HOURS	JOINTS COVERED ☐ YES ☐ NO
LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED NA GALS. NA HOURS ALLOWABLE LEAKAGE NA GALS. NA HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN IF NO, STATE REASON	☐ YES ☐ NO X
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM	☐ YES ☐ NO
REMARKS	DATE LEFT IN SERVICE	
SIGNATURES	NAME OF INSTALLING CONTRACTOR TESTS WITNESSED BY FOR PROPERTY OWNER (SIGNED) / TITLE / DATE	
	FOR INSTALLING CONTRACTOR (SIGNED) / TITLE D&T Mechanical / DATE	

ADDITIONAL EXPLANATION AND NOTES

Figure 8-2(b) (cont.).

8-2 Acceptance Requirements.

8-2.1* Flushing of Piping. Underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than:

(a) The hydraulically calculated water demand rate of the system including any hose requirements, or

(b) That flow necessary to provide a velocity of 10 ft per second (3 m/s), or

(c) The maximum flow rate available to the system under fire conditions.

Table 8-2.1 Flow Required to Produce a Velocity of 10 ft per second (3 m/s) in Pipes

Pipe Size (in.)	Flow Rate (gpm)	Flow Rate (L/min)
4	390	1476
6	880	3331
8	1560	5905
10	2440	9235
12	3520	13325

8-2.2 Hydrostatic Tests.

8-2.2.1* All interior piping and attached appurtenan subjected to system working pressure shall be hydrost cally tested at 200 psi (13.8 bars) and shall maintain t pressure without loss for 2 hours. Loss shall be determir by a drop in gauge pressure or visual leakage.

Exception No. 1: Portions of systems normally subjected to wo ing pressures in excess of 150 psi (10.4 bars) shall be tested described above at a pressure of 50 psi (3.5 bars) in excess of n mal working pressure.

Exception No. 2: When cold weather will not permit testing u water, an interim air test may be conducted as described in 8-2

The test pressure shall be read from a gauge located at low elevation point of the system or portion being tested.

8-2.2.2 Additives. Additives, corrosive chemicals such sodium silicate or derivatives of sodium silicate, brine, other chemicals shall not be used while hydrostatically te ing systems or for stopping leaks.

8-2.2.3 Piping between the exterior fire department co nection and the check valve in the fire department in pipe shall be hydrostatically tested in the same manner the balance of the system.

8-2.2.4 When hydrostatically testing deluge system plugs shall be installed in fittings and replaced with op sprinklers after the test is completed, or the operating e ments of automatic sprinklers shall be removed after t test is completed.

(j) Any small enclosures in which no sprinklers are to be installed.

(k) Size of city main in street, pressure and whether dead-end or circulating and, if dead-end, direction and distance to nearest circulating main, city main test results including elevation of test hydrant.

(l) Make, manufacturer, type, heat-response element, temperature rating, and nominal orifice size of sprinkler.

(m) Temperature rating and location of high-temperature sprinklers.

(n) Number of sprinklers on each riser, per floor.

(o) Kind and location of alarm bells.

(p) Type of pipe and fittings.

(q) Type of protection for nonmetallic pipe.

(r) Nominal pipe size with lengths shown to scale.

NOTE: Where typical branch lines prevail, it will be necessary to size only one line.

(s) Location and size of riser nipples.

(t) Type of fittings and joints and location of all welds d bends.

(u) Types and locations of hangers, sleeves, braces, and thods of securing sprinklers, where applicable.

(v) All control valves, check valves, drain pipes, and test nnections.

(w) Underground pipe size, length, location, weight, terial, point of connection to city main; the type of ves, meters, and valve pits; and the depth at which the of the pipe is laid below grade.

(x) For hydraulically designed systems, the material to included on the hydraulic data nameplate.

(y) Name and address of contractor.

2 Approval of Sprinkler Systems.

2.1 The installer shall perform all required accep- e tests (*see 2-1.3*), complete the Contractor's Material Test Certificate(s) (*see Figure 2-1.2.1*), and forward the ficate(s) to the authority having jurisdiction, prior to g for approval of the installation.

2.2 When the authority having jurisdiction desires to resent during the conducting of acceptance tests, the ller shall give advance notification of the time and the testing will be performed.

Acceptance Tests.

1 Flushing of Underground Connections.

1.1 Underground mains and lead-in connections to risers shall be flushed before connection is made to der piping, in order to remove foreign materials that have entered the underground piping during the of the installation. For all systems, the flushing ion shall be continued until water is clear.

2-1.3.1.2 Underground mains and lead-in connections shall be flushed at the hydraulically calculated water demand rate of the system.

2-1.3.1.3 To avoid property damage, provision shall be made for the disposal of water issuing from test outlets.

2-1.3.2* Hydrostatic pressure tests shall be provided in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*.

Exception: Testing for leakage at 50 psi (3.4 bars) water pressure above the maximum system pressure shall be acceptable for systems having less than 20 sprinklers and no fire department connection.

2-2 Design and Installation.

2-2.1 Devices and Materials.

2-2.1.1 Only new sprinklers shall be employed in the installation of sprinkler systems. At least 3 spare sprinklers of each type, temperature rating, and orifice size used in the system shall be kept on the premises. Replacement sprinklers shall have the same operating characteristics as the sprinklers being replaced.

2-2.1.2 Only listed or approved devices and materials as indicated in this standard shall be used in sprinkler systems.

2-2.1.3 Sprinkler systems shall be designed for a maximum working pressure of 175 psi (12.1 bars).

Exception: Higher design pressures may be used when all system components are rated for pressures higher than 175 psi (12.1 bars).

2-3 Water Supply.

2-3.1 General Provisions. Every automatic sprinkler system shall have at least one automatic water supply. When stored water is used as the sole source of supply, the minimum quantity shall equal the water demand rate times 30 minutes. (*See 2-5.1.3.*)

2-3.2* Water Supply Sources. The following water supply sources are acceptable:

(a) A connection to a reliable water works system with or without a booster pump, as required.

(b) An elevated tank.

(c) A pressure tank installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, and NFPA 22, *Standard for Water Tanks for Private Fire Protection*.

(d) A stored water source with an automatically operated pump, installed in accordance with NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps*.

CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING

Bldg 4

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME: S.U.N.Y. Phase II Housing — DATE: 2/21/03

PROPERTY ADDRESS: 735 Anderson Hill Rd. Purchase, NY 10577

PLANS	ACCEPTED BY APPROVING AUTHORITIES (NAMES)	
	ADDRESS	
	INSTALLATION CONFORMS TO ACCEPTED PLANS	☐ YES ☐ NO
	EQUIPMENT USED IS APPROVED	☐ YES ☐ NO
	IF NO, EXPLAIN DEVIATIONS	
INSTRUCTIONS	HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT?	☐ YES ☐ NO
	IF NO, EXPLAIN	
	HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:	☐ YES ☐ NO
	1. SYSTEM COMPONENTS INSTRUCTIONS	☐ YES ☐ NO
	2. CARE AND MAINTENANCE INSTRUCTIONS	☐ YES ☐ NO
	3. NFPA 13A	☐ YES ☐ NO
LOCATION OF SYSTEM	SUPPLIES BUILDINGS	

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Central	Optima	2002			160°
Tyco	TY3551	2001			160°

PIPE AND FITTINGS

Type of Pipe: Schedule 40 black & Victolic light wall

Type of Fittings: Schedule 40 malible black & Victolic fittings

ALARM VALVE OR FLOW INDICATOR

TYPE	ALARM DEVICE MAKE	ALARM DEVICE MODEL	MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION MIN.	SEC.
SystemSensor	Emperio 0SY2	Flow WFDT		
Potter	Tamper	0SY2-SU		

DRY VALVE

MAKE	MODEL	SERIAL NO.	Q.O.D. MAKE	MODEL	SERIAL NO.
N/A					

DRY PIPE OPERATING TEST

	TIME TO TRIP THRU TEST CONNECTION* MIN.	SEC.	WATER PRESSURE PSI	AIR PRESSURE PSI	TRIP POINT AIR PRESSURE PSI	TIME WATER REACHED TEST OUTLET* MIN.	SEC.	ALARM OPERATED PROPERLY YES	NO
Without Q.O.D.									
With Q.O.D.									

IF NO, EXPLAIN

*MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.

85A (10/95) PRINTED IN U.S.A. (OVER)

Figure 2-1.2.1 Contractor's material and test certificate for aboveground piping.

SYSTEM ACCEPTANCE

HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT 200 PSI FOR 2 HOURS	JOINTS COVERED ☐ YES ☐ NO
LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED NA GALS. NA HOURS	
	ALLOWABLE LEAKAGE NA GALS. NA HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN IF NO, STATE REASON	☐ YES ☐ NO
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM	☒ YES ☐ NO
REMARKS	DATE LEFT IN SERVICE	
SIGNATURES	NAME OF INSTALLING CONTRACTOR	
	TESTS WITNESSED BY	
	FOR PROPERTY OWNER (SIGNED) / TITLE / DATE	
	FOR INSTALLING CONTRACTOR (SIGNED) D&T Mechanical / TITLE / DATE	
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(b) (cont.).

8-2 Acceptance Requirements.

8-2.1* Flushing of Piping. Underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than:

(a) The hydraulically calculated water demand rate of the system including any hose requirements, or

(b) That flow necessary to provide a velocity of 10 ft per second (3 m/s), or

(c) The maximum flow rate available to the system under fire conditions.

Table 8-2.1 Flow Required to Produce a Velocity of 10 ft per second (3 m/s) in Pipes

Pipe Size (in.)	Flow Rate (gpm)	Flow Rate (L/min)
4	390	1476
6	880	3331
8	1560	5905
10	2440	9235
12	3520	13328

8-2.2 Hydrostatic Tests.

8-2.2.1* All interior piping and attached appurtenanc subjected to system working pressure shall be hydrosta cally tested at 200 psi (13.8 bars) and shall maintain th pressure without loss for 2 hours. Loss shall be determine by a drop in gauge pressure or visual leakage.

Exception No. 1: Portions of systems normally subjected to wor ing pressures in excess of 150 psi (10.4 bars) shall be tested described above at a pressure of 50 psi (3.5 bars) in excess of no mal working pressure.

Exception No. 2: When cold weather will not permit testing wit water, an interim air test may be conducted as described in 8-2.

The test pressure shall be read from a gauge located at th low elevation point of the system or portion being tested.

8-2.2.2 Additives. Additives, corrosive chemicals such a sodium silicate or derivatives of sodium silicate, brine, o other chemicals shall not be used while hydrostatically test ing systems or for stopping leaks.

8-2.2.3 Piping between the exterior fire department con nection and the check valve in the fire department inle pipe shall be hydrostatically tested in the same manner a the balance of the system.

8-2.2.4 When hydrostatically testing deluge systems, plugs shall be installed in fittings and replaced with open sprinklers after the test is completed, or the operating ele ments of automatic sprinklers shall be removed after the test is completed.

(j) Any small enclosures in which no sprinklers are to be nstalled.

(k) Size of city main in street, pressure and whether lead-end or circulating; and, if dead-end, direction and listance to nearest circulating main, city main test results ncluding elevation of test hydrant.

(l) Make, manufacturer, type, heat-response element, emperature rating, and nominal orifice size of sprinkler.

(m) Temperature rating and location of high-emperature sprinklers.

(n) Number of sprinklers on each riser, per floor.

(o) Kind and location of alarm bells.

(p) Type of pipe and fittings.

(q) Type of protection for nonmetallic pipe.

(r) Nominal pipe size with lengths shown to scale.

NOTE: Where typical branch lines prevail, it will be necessary to size only one line.

(s) Location and size of riser nipples.

(t) Type of fittings and joints and location of all welds id bends.

(u) Types and locations of hangers, sleeves, braces, and ethods of securing sprinklers, where applicable.

(v) All control valves, check valves, drain pipes, and test nnections.

(w) Underground pipe size, length, location, weight, terial, point of connection to city main; the type of ves, meters, and valve pits; and the depth at which the of the pipe is laid below grade.

(x) For hydraulically designed systems, the material to included on the hydraulic data nameplate.

y) Name and address of contractor.

2 Approval of Sprinkler Systems.

2.1 The installer shall perform all required accepe tests (*see 2-1.9*), complete the Contractor's Material Test Certificate(s) (*see Figure 2-1.2.1*), and forward the ificate(s) to the authority having jurisdiction, prior to ng for approval of the installation.

2.2 When the authority having jurisdiction desires to resent during the conducting of acceptance tests, the ller shall give advance notification of the time and the testing will be performed.

1 Acceptance Tests.

1.1 Flushing of Underground Connections.

1.1.1 Underground mains and lead-in connections to n risers shall be flushed before connection is made to dler piping, in order to remove foreign materials that have entered the underground piping during the se of the installation. For all systems, the flushing ation shall be continued until water is clear.

2-1.3.1.2 Underground mains and lead-in connections shall be flushed at the hydraulically calculated water demand rate of the system.

2-1.3.1.3 To avoid property damage, provision shall be made for the disposal of water issuing from test outlets.

2-1.3.2* Hydrostatic pressure tests shall be provided in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.*

Exception: Testing for leakage at 50 psi (3.4 bars) water pressure above the maximum system pressure shall be acceptable for systems having less than 20 sprinklers and no fire department connection.

2-2 Design and Installation.

2-2.1 Devices and Materials.

2-2.1.1 Only new sprinklers shall be employed in the installation of sprinkler systems. At least 3 spare sprinklers of each type, temperature rating, and orifice size used in the system shall be kept on the premises. Replacement sprinklers shall have the same operating characteristics as the sprinklers being replaced.

2-2.1.2 Only listed or approved devices and materials as indicated in this standard shall be used in sprinkler systems.

2-2.1.3 Sprinkler systems shall be designed for a maximum working pressure of 175 psi (12.1 bars).

Exception: Higher design pressures may be used when all system components are rated for pressures higher than 175 psi (12.1 bars).

2-3 Water Supply.

2-3.1 General Provisions. Every automatic sprinkler system shall have at least one automatic water supply. When stored water is used as the sole source of supply, the minimum quantity shall equal the water demand rate times 30 minutes. (*See 2-3.1.3.*)

2-3.2* Water Supply Sources. The following water supply sources are acceptable:

(a) A connection to a reliable water works system with or without a booster pump, as required.

(b) An elevated tank.

(c) A pressure tank installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems,* and NFPA 22, *Standard for Water Tanks for Private Fire Protection.*

(d) A stored water source with an automatically operated pump, installed in accordance with NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps.*

CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING

Bldg 5

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME: S.U.N.Y. Phase II Housing — DATE: 2/21/03

PROPERTY ADDRESS: 735 Anderson Hill Rd. Purchase, NY 10577

PLANS

ACCEPTED BY APPROVING AUTHORITIES (NAMES)

ADDRESS

INSTALLATION CONFORMS TO ACCEPTED PLANS ☐ YES ☐ NO

EQUIPMENT USED IS APPROVED ☐ YES ☐ NO

IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT? ☐ YES ☐ NO

IF NO, EXPLAIN

HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:

1. SYSTEM COMPONENTS INSTRUCTIONS ☐ YES ☐ NO
2. CARE AND MAINTENANCE INSTRUCTIONS ☐ YES ☐ NO
3. NFPA 13A ☐ YES ☐ NO

LOCATION OF SYSTEM

SUPPLIES BUILDINGS

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Central	Optima	2002			160°
Tyco	TY3651	2001			160°

PIPE AND FITTINGS

Type of Pipe: Schedule 40 black & Victolic light wall

Type of Fittings: Schedule 40 malable black & victolic Fittings

ALARM VALVE OR FLOW INDICATOR

TYPE	ALARM DEVICE MAKE	MODEL	MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION MIN.	SEC.
SystemSensor	Tamper: OSY2 / Flow: WFDT			
Potter	Tamper: OSY2-SU			

DRY PIPE OPERATING TEST

DRY VALVE MAKE	MODEL	SERIAL NO.	Q.O.D. MAKE	MODEL	SERIAL NO.
N/A					

	TIME TO TRIP THRU TEST CONNECTION* MIN.	SEC.	WATER PRESSURE PSI	AIR PRESSURE PSI	TRIP POINT AIR PRESSURE PSI	TIME WATER REACHED TEST OUTLET* MIN.	SEC.	ALARM OPERATED PROPERLY YES	NO
Without Q.O.D.									
With Q.O.D.									

IF NO, EXPLAIN

*MEASURED FROM TIME INSPECTORS TEST CONNECTION IS OPENED.

85A (10-88) PRINTED IN U.S.A. (OVER)

Figure 2-1.2.1 Contractor's material and test certificate for aboveground piping.

SYSTEM ACCEPTANCE

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LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED NA GALS. NA HOURS ALLOWABLE LEAKAGE NA GALS. NA HOURS	
HYDRANTS	NUMBER INSTALLED / TYPE AND MAKE	ALL OPERATE SATISFACTORILY ☐ YES ☐ NO
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN IF NO, STATE REASON	☐ YES ☐ NO X
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM	☐ YES ☐ NO
REMARKS	DATE LEFT IN SERVICE	
SIGNATURES	NAME OF INSTALLING CONTRACTOR TESTS WITNESSED BY FOR PROPERTY OWNER (SIGNED) / TITLE / DATE FOR INSTALLING CONTRACTOR (SIGNED) D. [illegible] / TITLE D&T Mechanical / DATE	
ADDITIONAL EXPLANATION AND NOTES		

Figure 8-1(b) (cont.).

8-2 Acceptance Requirements.

8-2.1* Flushing of Piping. Underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than:

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